Beamline Suite	Station	Beamline Type	Earth/Enviro led effort or BAT participation	Optimal NSLS-II Source	New or Transition	Analytical Techniques	Estimated % of effective beamline Earth/Enviro Community may Utilize	Optimal Energy Range	Desired Monochromator/Grating	Desired Optics	Beam Size Goal (µm)	Desired Detectors	Potential BAT Members	Notes	Operational for phase:
Mid and High Energy X-Ray µprobes	micro - 1A	hard x-ray µProbe	Earth/Enviro led	U20 Undulator (canted)	station equipment moved from X27A	µXRF, µXAS, µXRD, fluorescence CMT	80%	4-25 keV	Si(111) &Si(311), cryogenic DCM	Si KB mirror pair, beamline mirrors to produce secondary focus at variable slit (tunable spot size)	0.1-1.0	energy dispersive arrays for XRF (NSLS/CSIRO massively multi-element array), XAFS; buffering electronics; image plates and CCDs for µXRD	Lanzirotti, Sutton, Miller, Northrup, Fitts, Reeder, Eng, Rivers, Vogt, Myneni	collaborative effort with life sciences. Early LOI for 1A + 1B, MIE	1
	micro - 1B	hard x-ray µProbe	Life Sciences and Earth /Enviro Sciences joint effort	U20 Undulator (canted)	new beamline, shared infrastructure and operation with 1A	µXRF, µXAS	50%	2-15 keV	Si(111) &Si(311), cryogenic DCM, grating monochromator to reach 2 keV	hard x-ray zone plates, focal plane tracking during mono scans	0.02-0.1	energy dispersive arrays for XRF (NSLS/CSIRO massively multi-element array), XAFS; buffering electronics	Miller, Vogt, Lanzirotti, Myneni, Sutton, Northrup, Fitts, Eng, Rivers, Reeder	collaborative effort with life sciences. Early LOI for 1A + 1B, MIE	1
	micro - 2	hard x-ray µProbe	Earth/Enviro led	TPW	transition X26A (end-station eqipment only)	µXRF, µXAS, µXRD, fluorescence CMT	80%	4-25 keV	Si(111) &Si(311), DCM	Si KB mirror pair (transitioned from X26A), full field tomography apparatus upstream of µProbe	0.1-1.0	energy dispersive arrays for XRF, XAFS; buffering electronics; image plates and CCDs for µXRD; visible light CCD for CMT;	Lanzirotti, Sutton, Miller, Northrup, Fitts, Reeder, Jones	collaborative effort with life sciences. LOI for transitioned beamline. 2nd round LOI	1
	micro - 3	tender x-ray µProbe	Earth/Enviro and Life Sciences joint effort	soft bend	transition X15B	µXRF, µXAS	50%	1-8 keV	transitioned X15B monochromator	Ni coated KB mirror pair, secondary focus (tunable spot size)	1.0-10.0	energy dispersive arrays for XRF, XAFS; buffering electronics;	Northrup, Brandes, Sparks, Hesterberg, Myneni	Later LOI	1
	nano - 1	hard x-ray nanoprobe	Project Beamline (BAT)	U19 Undulator	New (project)	nm-XRF	20%	4-24 keV	cryo cooled Si(111)	MLL lenses	1 nm	energy dispersive arrays for XRF	Lanzirotti, Vogt, Jacobsen	Project (LOI first round)	1
Mid and Far IR µSpectroscopy	IR - 1	IR-µSpec	BAT	Soft Bend Magnet	Move U10B	mid- and far-IR microspectroscopy	30%	50-4000 cm-1	interferometer		1.0-10.0	Bolometer (far-IR), MCT-A (mid-IR)	Miller, Carr		
	IR - 2	IR-imaging	BAT	Soft Bend Magnet	Move U4IR	mid-IR imaging	20%	500-4000 cm-1	interferometer		1.0-10.0	MCT-A FPA with a spectral range from 500-4000 cm-1	Miller, Carr		
EXAFS	exafs -1A	macro beam on DW	Project Beamline (BAT)	DW90	New (project)	EXAFS	30%	5.5-90 keV?	Si(111)/(333), step and slew modes	macro focusing	0.2x0.2-5x55mm	energy dispersive arrays; buffering electronics; high energy resolution, wavelength dispersive, area detector for XRD, diffractometer for DAFS		Project (initially shares beam with exafs-1B) (LOI first round for both)	1 and 2
	exafs-1B	micro beam on DW	Project Beamline (BAT)	DW90	New (Project)	micro XAS	30%	5.5-50 keV	Si(111)/(333), step and slew modes	KB optics	~1.0 micron			Project	1 and 2
	exafs - 2	EXAFS on TPW	Multidisciplinary (BAT)	TPW	transition X11A or X19A	EXAFS	50%	4-25 keV	Si(111) &Si(311)	macro focusing	0.1-1 mm?	energy dispersive arrays; buffering electronics;		Later LOI	1
	exafs - 3A	EXAFS on TPW	Life Sciences led (BAT)	TPW	transition X3B	EXAFS	25%	4-25 keV	Si(111) &Si(311)	sagittal focusing monochromator	0.1-10 mm	energy dispersive arrays; buffering electronics;		early LOI?	1
	exafs - 3B	EXAFS on TPW	Earth/Enviro and Life Sciences joint effort	TPW	new	EXAFS	50%	4-25 keV	Si(111) &Si(311)	sagittal focusing monochromator	0.1-10 mm	energy dispersive arrays; buffering electronics;		Later LOI	2
	exafs - 4	EXAFS on TPW	NIST (GU access)	TPW	NIST Plan	EXAFS	20%	4-25 keV	Si(111) &Si(311)		0.1-10 mm	energy dispersive arrays; buffering electronics;		early LOI	1
	exafs - 5	EXAFS on Soft Bend	Multidisciplinary (Earth/enviro led BAT)	Soft Bend	transition X15B program	tender EXAFS	50%	1-6 keV	various	macro focusing	1 mm	energy dispersive arrays; buffering electronics;	Northrup, Hesterberg, Brandes, catalysis and mat sci	later LOI	1
	qexafs - 1	quick scanning on 3PW	Catalysis led (BAT)	3PW	X18B transition	quick-EXAFS	30%	4-22 keV?	Si(111) &Si(311)		1-10 mm	energy dispersive arrays; buffering electronics;		contribution to Catalysis effort; LOI, MIE;	1
	qexafs - 2	quick scanning on DW	Catalysis led (BAT)	DW90	new beamline	quick-EXAFS	30%	5-20 keV?	Si(111) &Si(311)		1 mm	energy dispersive arrays; buffering electronics;		contribution to Catalysis effort; LOI, MIE;	2
	exafs - 1C	Side Station on DW	Project upgrade, multidisciplinary (BAT)	DW90	new (upgrade to Project beamline)	EXAFS	25%	2-6 keV	Si(111)	macro focusing	0.5x6-9x6 mm			later LOI	2
Bulk Scattering - High E	PING -1	focused beam on DW	Project Beamline (BAT)	DW100	New (project)	High res powder, time resolved, PDF	10%	40 - 100 keV	Double bent Laue	CRO	5 - 500 µm	Analyzer-bank, Si(Ge) strip, Area intercahngeable	Billinge, Chupas, Ehm, Hanson, Kaduk, Parise, Stephens	Project	
	PING -2	focused beam on DW	Project Beamline (BAT)	DW100	New (project)	HP, environmental cells	20%	40 - 100 keV	Double bent Laue	CRO (+ KB?)	5 - 500 µm	on all threee beamlines			
	PING -3	fixed(3) energy side station DW	Project Beamline (BAT)	DW100	New (project)	Engineering, PDF, HP	20%	45 keV	Laue	KB?	5 - 500 µm			Needs EFAC to make this part of PING build-out	
Bulk Scattering - Low E	Bus - 1	Focused and unfocused bulk powder	Materials lead effort	3-pole wiggler	transition X7A/B/X16	high res powder	10%	5 - 20 keV	?	?	5-500 µm	Analyzer bank (like PING-1)	Billinge, Chupas, Ehm, Hanson, Kaduk, Parise, Stephens	Collaborative effort with materials	
	Bus -2	single crystal	Materials lead	3-pole wiggler	New (project)	single crystal	10%	5-20 keV	?	?				collaborative chemical crystallography	
High Pressure / High Energy	HiP - 1A	High P/E SCW	Earth/Enviro led	SCW 60	new	Large Volume Press diffraction/imaging	75%	4-100 keV			1.0-10.0		Weidner/Ehm		
	HiP - 1B	High P/E SCW	Earth/Enviro led	SCW 60	new	LH-DAC diffraction/imaging	75%	4-100 keV			1.0-5.0		Weidner/Ehm		
	HiP - 1C	High P/E SCW	Earth/Enviro led	SCW 60	new	LVP diffraction/imaging	75%	30-40 keV			1.0-5.0		Weidner/Ehm		
	HiP - 1D	High P/E SCW	Earth/Enviro led	SCW 60	new	LH-DAC diffraction/imaging	75%	30-40 keV			1.0-5.0		Weidner/Ehm		
	HiP - 2A	Inelastic Scattering		U19 CMPU	new	LH-DAC; Inelastic Scattering and Spectroscopy, Diffraction	50%	5-25 keV			1.0-5.0		Goncharov, Duffy		
	HiP - 2B	Inelastic Scattering		U19 CMPU	new	LH-DAC; Inelastic Scattering and Spectroscopy, Diffraction	50%	5-25 keV			1.0-5.0		Goncharov, Duffy		
	HiP -3	IR µSpectroscopy	Earth/Enviro led	soft bend	transition U2A	High-P mid and far IR µSpectroscopy	50%	50-4000 cm-1	interferometer		1.0-10.0		Zhenxian Liu		